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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/302,898	04/30/1999	MICHAEL P. CAREN	10990105-5	7610

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AGILENT TECHNOLOGIES, INC.
INTELLECTUAL PROPERTY ADMINISTRATION, LEGAL DEPT.
P.O. BOX 7599
M/S DL429
LOVELAND, CO 80537-0599

EXAMINER

MARSCHEL, ARDIN H

ART UNIT	PAPER NUMBER
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1631

DATE MAILED: 07/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/302,898

Applicant(s)

CAREN ET AL.

Examiner

Ardin Marschel

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 9/13/04 and Interview of 2/9/05.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 and 20-48 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-18 and 20-48 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☒ Interview Summary (PTO-413)
Paper No(s)/Mail Date. (4 copies).
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

S.O.O.

DETAILED ACTION

Applicants' arguments, filed 9/13/04 and Interview of 2/9/05, have been fully considered but they are not deemed to be persuasive. Rejections and/or objections not reiterated from previous office actions are hereby withdrawn. The following rejections and/or objections are either reiterated or newly applied. They constitute the complete set presently being applied to the instant application.

The amendment, filed 9/13/04, has been entered.

Due to the newly applied rejections summarized below, the finality of the office action, mailed 7/14/04, is hereby withdrawn. Due to the withdrawal of said finality the Notice of Appeal, filed 1/14/05, is deemed moot. It is acknowledged that applicants indicated a possible agreement for an examiner's amendment as summarized in the Examiner Interview Summary of 2/9/05, but that such an amendment is not provided for at this time due to this reopening of prosecution over newly set forth issues.

VAGUENESS AND INDEFINITENESS

Claims 1-18 and 20-48 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In instant claim 1, part (a), the polynucleotide deposition system is operated to deposit an array to provide a target pattern of spots. One interpretation is that the target pattern is what is resultant from the operating step (a). This interpretation, however, conflicts with the interpretation that there is an "actual" pattern as in step (c) which is different. Clarification via clearer claim wording is requested so that the operating step

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(a) is clearly worded as to its being a desired pattern, for example, or planned pattern in order to distinguish it from the actual pattern in steps (c) and (d). This unclarity is also equivalently present in independent claims 18, 25, 39, and 46. Claims dependent from claims 1, 25, 39, or 46 also contain this unclarity due to their dependence.

PRIOR ART

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1-3, 5-8, 10-13, 25, 27, 29-31, and 39-42 are rejected under 35 U.S.C. 102(a) as being clearly anticipated by Graves et al. [Anal. Chem. 70:5085 (1998)].

Graves et al. discloses the preparing of DNA sequences in arrays on glass slides in the title and abstract. On page 5085, second column, first sentence, the depositing of microdroplets in precise locations is described as targeted locations. Table 2 on page 5086 sets forth arraying equipment inclusive of video camera and microscope items. In the bridging sentence between pages 5085 and 5086 the robotic table which accomplishes the arraying is indicated as an X,Y system with additionally Z direction movement. In the first paragraph of the first column on page 5086, deposition is described with a video camera system. Desired spot locations for various substrates is disclosed on page 5088, first column, in the section entitled "Droplet Deposition" via, for example, 1-mm centers or deposition in a 96-well plate or droplets spaced 500 um

apart. On page 5090, second column, the section entitled "System Performance" describes measuring reproducibility of deposition which reasonably discloses comparison of targeted deposition with actual deposition as in instant claim 1, parts (c) and (d) and instant claims 8 and 31. This imaging disclosure also reads on instant claim 2 and is illustrated in Figure 7 on page 5091 of the reference. This section also discloses drying of the spots as required in parts (a) and (b) of instant claim 1. Variation in spot deposition is shown on page 5091, Figure 7, via fluorescently tagged oligonucleotide spots and further illustrated as the process via ink spots also in said Figure. Oligonucleotides as disclosed in the reference are reasonably species of polynucleotides as instantly claimed. A specie of a claimed invention as disclosed in a reference is deemed to anticipate the claimed invention. The arraying of different polynucleotides in such arrays is disclosed in the reference on page 5085, first 2 sentences after the abstract as in instant claim 3. Gene oligonucleotides in spots of Figure 7 of 21 bases are disclosed in the first full sentence in the second column on page 5091 of the reference which are DNA as being gene sequences and are hybridizable (and complementary cDNA) and thus single stranded (see title) and thus anticipate the limitations of instant claims 5-7. Light from fluorescently labeled material is scattered in all directions as partially imaged in Figure 7 of the reference which is also indicative of a result of an image utilized in spot comparison and thus anticipates instant claims 10-12, 29, and 30. The system of the reference fabricates multiple arrays as shown in Figures 2 and 3 on pages 5087 and 5088 with related discussion and thus anticipates instant claim 13 in that the substrate is complex and made up of a set of

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slides and 96-well plates. Instant claim 13 does not define any limitation as to complexity or simplicity of the multiple array substrate. Piezo deposition nozzles in the system of the reference are also disclosed on page 5086, first column, first full paragraph, as also required in instant claim 27.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 46 is rejected under 35 U.S.C. 103(a) as being unpatentable over Baldeschwieler et al. (P/N 6,015,880); taken in view of Weber et al. (P/N 4,328,504).

The basis for this rejection against instant claim 46 has been set forth in the Office action, mailed 2/24/04, and is reiterated here. In REMARKS, filed 9/13/04, applicants argue that the combination of Baldeschwieler et al. and Weber et al. would not be obvious due to the present invention solving a problem not appreciated by either. In response, this allegation argument is contrary to the fact that the instant invention apparently is directed to error correction as is suggested by the combination of references, in particular, by Weber et al. which corrects errors as instantly claimed in

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the type of printing environment as is performed by Baldeschwieler et al. Thus, the combination of Baldeschwieler et al. with Weber et al. does, in fact, solve a problem as does instant claim 46. Thus, applicants' argument is contrary to the facts of the instant claim as compared to said combination of references and is therefore non-persuasive.

OBVIOUSNESS DOUBLE-PATENTING

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-3, 5-12, 25, 29-31, 39-43, and 46 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 2, 3, 8, 10, 13, 14, and 50 of copending Application No. 09/359,527.

Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant claims are directed to embodiments wherein target vs. actual deposition patterns are compared wherein correction is applied in order to obtain a corrected spot pattern for array fabrication as in dependent instant claim 43 which describes this specie of invention.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

FURTHER COMMENT ON GANZ ET AL. (P/N 6,558,623)

Ganz et al.(P/N 6,558,623) may support an interference proceeding. Regarding such a proceeding, the instant application is deemed to define a contested case subject to 37 CFR 41.102 as defined in 37 CFR 41.200, part (a), and therefore will not be considered for an interference proceeding until all other examination issues have been overcome.

No claim is allowed.

Papers related to this application may be submitted to Technical Center 1600 by facsimile transmission. Papers should be faxed to Technical Center 1600 via the Central PTO Fax Center. The faxing of such papers must conform with the notices published in the Official Gazette, 1096 OG 30 (November 15, 1988), 1156 OG 61 (November 16, 1993), and 1157 OG 94 (December 28, 1993)(See 37 CFR § 1.6(d)). The Central PTO Fax Center number is (571) 273-8300.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ardin Marschel, Ph.D., AU 1631 Supervisory Patent Examiner, whose telephone number is (571) 272-0718. The examiner can normally be reached on Monday-Friday from 8 A.M. to 4 P.M.

Any inquiry of a general nature or relating to the status of this application should be directed to Legal Instrument Examiner, Tina Plunkett, whose telephone number is (571) 272-0549.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

July 3, 2005

Ardin H. Marschel 7/3/05
ARDIN H. MARSCHEL
SUPERVISORY PATENT EXAMINER